```
Latência 0:
s:      iperf -s -u &
c:      iperf -c <ip> -i 1 -p <porta-destino> -u -b 100M &
s:      iperf -s -p 5002 -Z reno
t:      sh getCWND 5002 relatorioReno1.txt
c:      iperf -c <ip> -t 60 -i 1 -p <porta-destino> -Z reno -b 100M >clienteReno.txt
t:      finaliza o sh
t:      sh getCWND 5002 relatorioReno5.txt
c:      iperf -c <ip> -t 60 -i 1 -p <porta-destino> -Z reno -P 5 -b 100M>clienteReno5.txt
t:      sh getCWND 5002 relatorioReno10.txt
c:      iperf -c <ip> -t 60 -i 1 -p <porta-destino> -Z reno -P 10 -b
100M>clienteReno10.txt
t:      finaliza o sh
s:      finaliza o servidor RENO
s:      iperf -s -p 5003 -Z cubic
t:      sh getCWND 5003 relatorioCubic1.txt
c:      iperf -c <ip> -t 60 -i 1 -p <porta-destino> -Z cubic -b 100M >clienteCubic.txt
t:      finaliza o sh
t:      sh getCWND 5003 relatorioCubic5.txt
c:      iperf -c <ip> -t 60 -i 1 -p <porta-destino> -Z cubic -P 5 -b 100M
>clienteCubic5.txt
t:      finaliza o sh
t:      sh getCWND 5003 relatorioCubic10.txt
c:      iperf -c <ip> -t 60 -i 1 -p <porta-destino> -Z cubic -P 10 -b 100M
>clienteCubic10.txt
t:      finaliza o sh
s:      finaliza servidor UDP e TCP
```

Latência 200ms:

```
s:      sudo tc qdisc add dev <interface> root netem delay 200ms
s:      iperf -s -u &
c:      iperf -c <ip> -i 1 -p <porta-destino> -u -b 100M &
s:      iperf -s -p 5002 -Z reno
t:      sh getCWND 5002 relatorioReno1lat200.txt
c:      iperf -c <ip> -t 60 -i 1 -p <porta-destino> -Z reno -b 100M
>clienteRenolat200.txt
t:      finaliza o sh
t:      sh getCWND 5002 relatorioReno5lat200.txt
c:      iperf -c <ip> -t 60 -i 1 -p <porta-destino> -Z reno -P 5 -b
100M>clienteReno5lat200.txt
t:      sh getCWND 5002 relatorioReno10lat200.txt
c:      iperf -c <ip> -t 60 -i 1 -p <porta-destino> -Z reno -P 10 -b
100M>clienteReno10lat200.txt
t:      finaliza o sh
s:      finaliza o servidor RENO
s:      iperf -s -p 5003 -Z cubic
t:      sh getCWND 5003 relatorioCubic1lat200.txt
c:      iperf -c <ip> -t 60 -i 1 -p <porta-destino> -Z cubic -b 100M
>clienteCubiclat200.txt
t:      finaliza o sh
t:      sh getCWND 5003 relatorioCubic5lat200.txt
c:      iperf -c <ip> -t 60 -i 1 -p <porta-destino> -Z cubic -P 5 -b 100M
>clienteCubic5lat200.txt
t:      finaliza o sh
t:      sh getCWND 5003 relatorioCubic10lat200.txt
c:      iperf -c <ip> -t 60 -i 1 -p <porta-destino> -Z cubic -P 10 -b 100M
>clienteCubic10lat200.txt
t:      finaliza o sh
s:      finaliza servidor UDP e TCP
```

Abrir | clienteCubic.txt ~/UDESC/REC/TrabalhoFinal/TF | Salvar

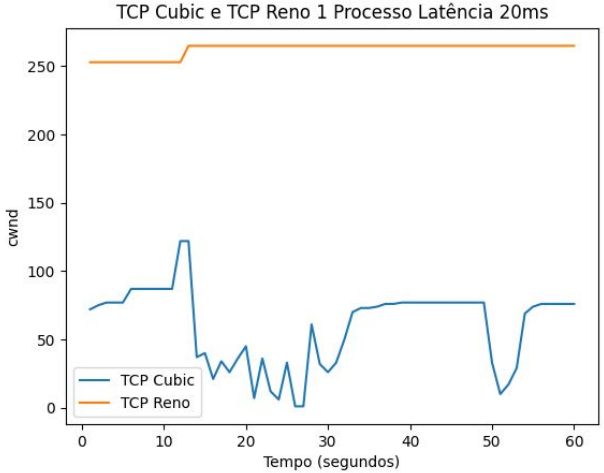
Comandos | clienteCubic.txt

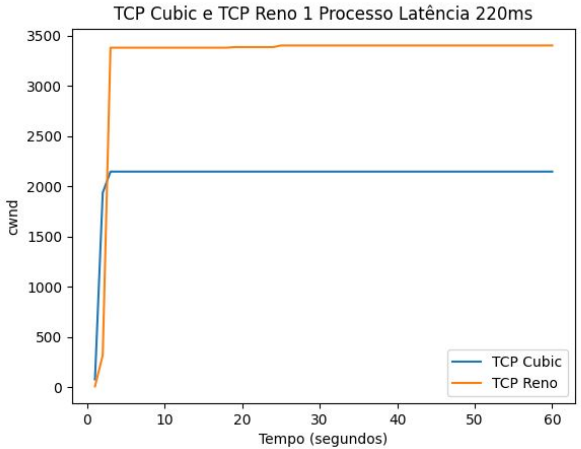
```
------------------------------------------------------------
Client connecting to 192.168.0.186, TCP port 5003
TCP window size:  170 KByte (default)
------------------------------------------------------------
[  3] local 192.168.0.159 port 53404 connected with 192.168.0.186 port 5003
[ ID] Interval       Transfer     Bandwidth
[  3]  0.0- 1.0 sec  11.8 MBytes  98.6 Mbits/sec
[  3]  1.0- 2.0 sec  11.1 MBytes  93.3 Mbits/sec
[  3]  2.0- 3.0 sec  11.2 MBytes  94.4 Mbits/sec
[  3]  3.0- 4.0 sec  11.1 MBytes  93.3 Mbits/sec
[  3]  4.0- 5.0 sec  11.2 MBytes  94.4 Mbits/sec
[  3]  5.0- 6.0 sec  11.1 MBytes  93.3 Mbits/sec
[  3]  6.0- 7.0 sec  11.2 MBytes  94.4 Mbits/sec
[  3]  7.0- 8.0 sec  11.1 MBytes  93.3 Mbits/sec
[  3]  8.0- 9.0 sec  11.2 MBytes  94.4 Mbits/sec
[  3]  9.0-10.0 sec  11.1 MBytes  93.3 Mbits/sec
[  3] 10.0-11.0 sec  11.5 MBytes  96.5 Mbits/sec
[  3] 11.0-12.0 sec  11.1 MBytes  93.3 Mbits/sec
[  3] 12.0-13.0 sec  11.2 MBytes  94.4 Mbits/sec
[  3] 13.0-14.0 sec  10.6 MBytes  89.1 Mbits/sec
[  3] 14.0-15.0 sec  10.0 MBytes  83.9 Mbits/sec
[  3] 15.0-16.0 sec  5.25 MBytes  44.0 Mbits/sec
[  3] 16.0-17.0 sec  3.75 MBytes  31.5 Mbits/sec
[  3] 17.0-18.0 sec  10.0 MBytes  83.9 Mbits/sec
[  3] 18.0-19.0 sec  4.88 MBytes  40.9 Mbits/sec
[  3] 19.0-20.0 sec  7.12 MBytes  59.8 Mbits/sec
[  3] 20.0-21.0 sec  5.88 MBytes  49.3 Mbits/sec
[  3] 21.0-22.0 sec  5.62 MBytes  47.2 Mbits/sec
[  3] 22.0-23.0 sec  3.38 MBytes  28.3 Mbits/sec
[  3] 23.0-24.0 sec  7.12 MBytes  59.8 Mbits/sec
[  3] 24.0-25.0 sec  9.00 MBytes  75.5 Mbits/sec
[  3] 25.0-26.0 sec  6.62 MBytes  55.6 Mbits/sec
[  3] 26.0-27.0 sec  6.75 MBytes  56.6 Mbits/sec
[  3] 27.0-28.0 sec  9.00 MBytes  75.5 Mbits/sec
```

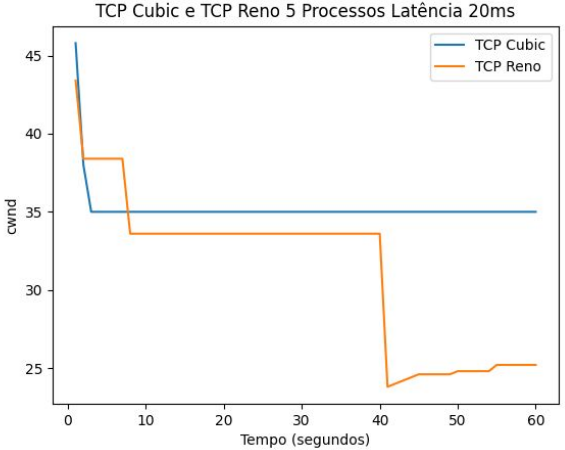
Abrir | relatorioCubic1.txt ~/UDESC/REC/TrabalhoFinal/TF | Salvar

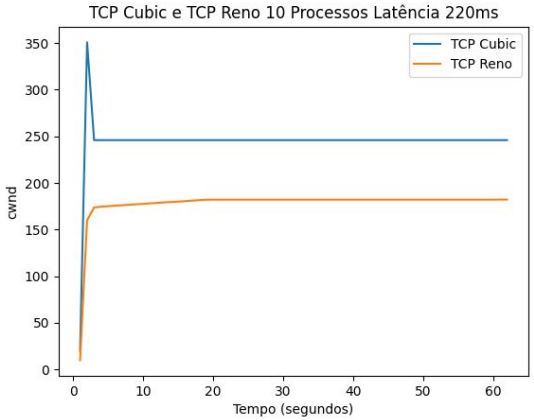
Comandos | clienteCubic.txt | relatorioCubic1.txt

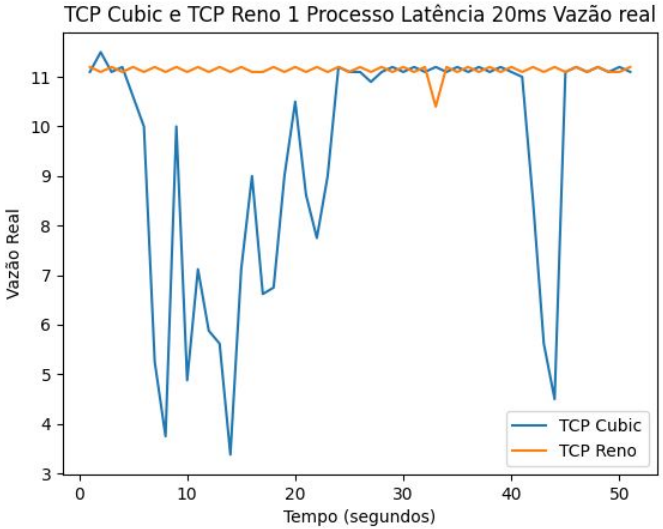
```
1  cwnd:72
1  cwnd:75
1  cwnd:77
1  cwnd:77
1  cwnd:77
1  cwnd:87
1  cwnd:87
1  cwnd:87
1  cwnd:87
1  cwnd:87
1  cwnd:87
1  cwnd:87
1  cwnd:122
1  cwnd:122
1  cwnd:37
1  cwnd:40
1  cwnd:21
1  cwnd:34
1  cwnd:26
1  cwnd:36
1  cwnd:45
1  cwnd:7
1  cwnd:36
1  cwnd:12
1  cwnd:6
1  cwnd:33
1  cwnd:1
1  cwnd:1
1  cwnd:61
1  cwnd:32
1  cwnd:26
1  cwnd:33
1  cwnd:50
1  cwnd:70
1  cwnd:73
```

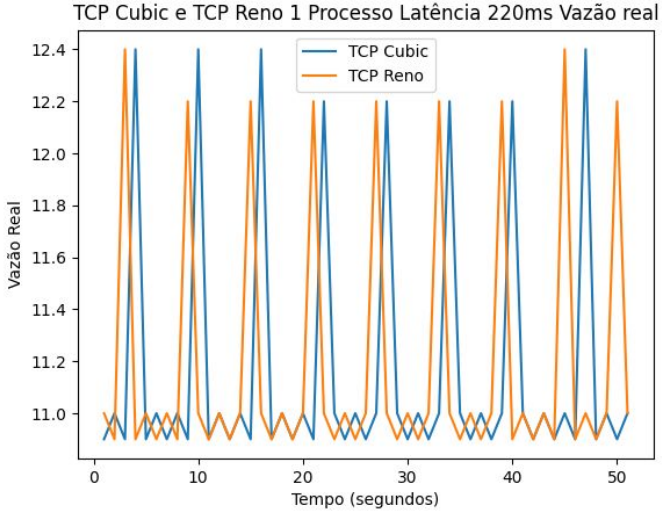

TCP Cubic e TCP Reno 1 Processo Latência 20ms
cwnd
Tempo (segundos)
TCP Cubic
TCP Reno

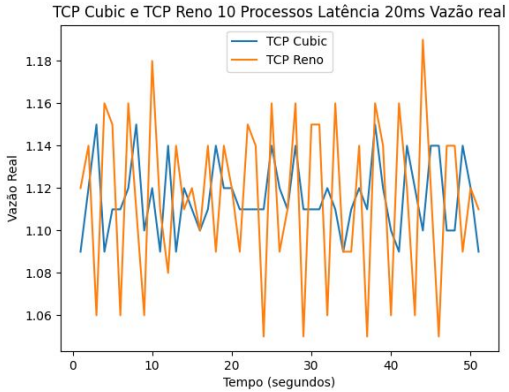

TCP Cubic e TCP Reno 1 Processo Latência 220ms
cwnd
Tempo (segundos)
TCP Cubic
TCP Reno

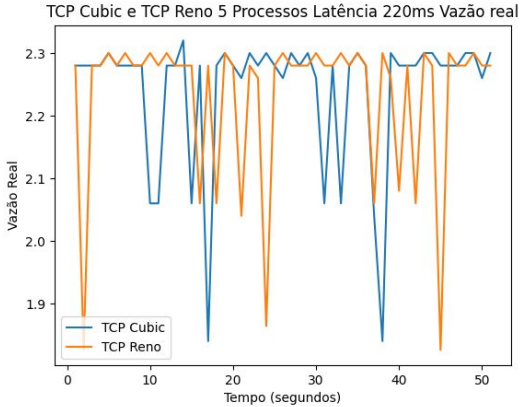

TCP Cubic e TCP Reno 5 Processos Latência 20ms
cwnd
Tempo (segundos)
TCP Cubic
TCP Reno


TCP Cubic e TCP Reno 10 Processos Latência 220ms
cwnd
Tempo (segundos)
TCP Cubic
TCP Reno


TCP Cubic e TCP Reno 1 Processo Latência 20ms Vazão real
Vazão Real
Tempo (segundos)
TCP Cubic
TCP Reno


TCP Cubic e TCP Reno 1 Processo Latência 220ms Vazão real
Vazão Real
Tempo (segundos)
TCP Cubic
TCP Reno


TCP Cubic e TCP Reno 10 Processos Latência 20ms Vazão real
Vazão Real
Tempo (segundos)
TCP Cubic
TCP Reno


TCP Cubic e TCP Reno 5 Processos Latência 220ms Vazão real
Vazão Real
Tempo (segundos)
TCP Cubic
TCP Reno